Sertifikaat

PATENTKANTOOR
REPUBLIC OF SOUTH AFRICA

DEPARTEMENT VAN HANDEL
EN NYWERHEID

Certificate

PATENT OFFICE
REPUBLIEK VAN SUID-AFRIKA

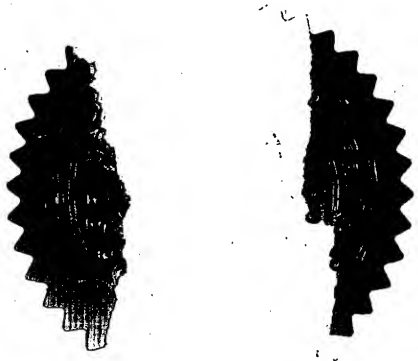
DEPARTMENT OF TRADE AND
INDUSTRY

Hiermee word gesertifiseer dat
This is to certify that

the documents annexed hereto are true copies of:

Application forms P.1 and P.3, provisional specification of South African Patent Application No. 2002/5796 as originally filed in the Republic of South Africa on 19 July 2002 in the name of JENNINGS, Dennis Richard for an invention entitled: "A RELEASE AGENT FOR USE IN BAKING APPLICATIONS".

Geteken te PRETORIA in die Republiek van Suid-Afrika, hierdie **4th** dag van **July 2003**
Signed at PRETORIA in the Republic of South Africa, this **4th** day of **July 2003**



Registrateur van Patente

REPUBLIC OF SOUTH AFRICA
PATENTS ACT, 1978
APPLICATION FOR A PATENT AND
ACKNOWLEDGEMENT OF RECEIPT
(Section 30(1) Regulation 22)

FORM P.1 (to be lodged in duplicate)

19.7.02 R 060.00

THE GRANT OF A PATENT IS HEREBY REQUESTED BY THE UNDERMENTIONED APPLICANT ON THE BASIS OF THE PRESENT APPLICATION FILED IN DUPLICATE

21	01	PATENT APPLICATION NO 2002/5798	A&A REF V15312MR

71	FULL NAME(S) OF APPLICANT(S)

JENNINGS, Dennis Richard

ADDRESS(ES) OF APPLICANT(S)

38 Cherry Lane, Pennington, 4154, Republic of South Africa

54	TITLE OF INVENTION

"A RELEASE AGENT FOR USE IN BAKING APPLICATIONS"

Only the items marked with an "X" in the blocks below are applicable.

[ ] THE APPLICANT CLAIMS PRIORITY AS SET OUT ON THE ACCOMPANYING FORM P.2. The earliest priority claimed is
Country: **NIL** No: **NIL** Date: **NIL**

[ ] THE APPLICATION IS FOR A PATENT OF ADDITION TO PATENT APPLICATION NO 21 01

[ ] THIS APPLICATION IS A FRESH APPLICATION IN TERMS OF SECTION 37 AND BASED ON APPLICATION NO 21 01

THIS APPLICATION IS ACCOMPANIED BY:

[X] A single copy of a provisional specification of 7 pages
[ ] Drawings of sheet(s)
[ ] Publication particulars and abstract (Form P.8 in duplicate) (for complete only)
[ ] A copy of Figure of the drawings (if any) for the abstract (for complete only)
[ ] An assignment of invention
[ ] Certified priority document(s). (State quantity)
[ ] Translation of the priority document(s)
[ ] An assignment of priority rights
[ ] A copy of Form P.2 and the specification of RSA Patent Application No 21 01
[X] Form P.2 in duplicate
[X] A declaration and power of attorney on Form P.3
[ ] Request for ante-dating on Form P.4
[ ] Request for classification on Form P.9
[ ] Request for delay of acceptance on Form P.4
[x] Copy of Form P.1

74	ADDRESS FOR SERVICE: Adams & Adams, Pretoria

Dated this 18 day of July 2002

M ROTTEVEEL

ADAMS & ADAMS
APPLICANTS PATENT ATTORNEYS

The duplicate will be returned to the applicant's address for service as proof of lodging but is not valid unless endorsed with official stamp

REGISTRAR OF PATENTS DESIGNS, TRADE MARKS AND COPYRIGHT
OFFICIAL DATE STAMP
2002 -07- 19
REGISTRATEUR VAN PATENTE, MODELLE HANDELSMERKE EN OUTEURSREG
REGISTRAR OF PATENTS

A&A P201

ADAMS & ADAMS
PRETORIA

REPUBLIC OF SOUTH AFRICA
PATENTS ACT, 1978
DECLARATION AND POWER OF ATTORNEY
(Section 30 - Regulation 8, 22(i)(c) and 33)

FORM P.3

PATENT APPLICATION NO		A&A REF: V15312 MR	LODGING DATE	
21	01	~~2002/5796~~	22	19 JULY 2002

FULL NAME(S) OF APPLICANT(S)	
71	JENNINGS, Dennis Richard

FULL NAME(S) OF INVENTOR(S)	
72	JENNINGS, Dennis Richard

EARLIEST PRIORITY CLAIMED	COUNTRY		NUMBER		DATE	
	33	NIL	31	NIL	32	NIL

NOTE: The country must be indicated by its International Abbreviation - see schedule 4 of the Regulations

TITLE OF INVENTION	
54	"A RELEASE AGENT FOR USE IN BAKING APPLICATIONS"

* I/We JENNINGS, Dennis Richard

hereby declare that :-

* 1. I/we am/are the applicant(s) mentioned above;

** 2. ~~I/we have been authorized by the applicant(s) to make this declaration and have knowledge of the facts herein stated in the capacity of of the applicant(s);~~

*** 3. the inventor(s) of the abovementioned invention is/are the person(s) named above ~~and the applicant(s) has/have acquired the right to apply by virtue of an assignment from the inventor(s)~~;

4. to the best of my/our knowledge and belief, if a patent is granted on the application, there will be no lawful ground for the revocation of the patent;

**** 5. this is a convention application and the earliest application from which priority is claimed as set out above is the first application in a convention country in respect of the invention claimed in any of the claims; and

6. the partners and qualified staff of the firm of **ADAMS & ADAMS**, patent attorneys, are authorised, jointly and severally, with powers of substitution and revocation, to represent the applicant(s) in this application and to be the address for service of the applicant(s) while the application is pending and after a patent has been granted on the application.

SIGNED AT PRETORIA THIS 18TH DAY OF JULY : 2002

SIGNATURE(S)
(no legalization necessary)

* In the case of application in the name of a company, partnership or firm, give full names of signatory/signatories, delete paragraph 1, and enter capacity of each signatory in paragraph 2.
** If the applicant is a natural person, delete paragraph 2.
*** If the right to apply is not by virtue of an assignment from the inventor(s), delete "an assignment from the inventor(s)" and give details of acquisition of right.
**** For non-convention applications, delete paragraph 5.

A & A Ref No: **V15312 MR**

ADAMS & ADAMS
PATENT ATTORNEYS
PRETORIA

FORM P6

REPUBLIC OF SOUTH AFRICA
Patents Act, 1978

PROVISIONAL SPECIFICATION
(Section 30 (1) - Regulation 27)

21	01	OFFICIAL APPLICATION NO

22	LODGING DATE

19 JULY 2002

2002/5796

71	FULL NAME(S) OF APPLICANT(S)

JENNINGS, Dennis Richard

72	FULL NAME(S) OF INVENTOR(S)

JENNINGS, Dennis Richard

54	TITLE OF INVENTION

"A RELEASE AGENT FOR USE IN BAKING APPLICATIONS"

A&A P206

2002/5796

THIS INVENTION relates to a release agent for use in baking applications.

A release agent as herein envisaged is used particularly in relation to bread baking, to facilitate the release of a baked bread from the pan in which it has been baked. Known release agents are applied directly to baking pans before the introduction of bread dough therein but, particularly after a number of usages of pans, cause severe fouling of the pans, thus requiring regular cleaning, or even replacement of pans. Clearly, release agents also are used in conjunction with other forms of baking, but for the sake of convenience only bread baking is referred to herein.

It is an object of this invention to provide a release agent in respect of the use of which the above problem of pan fouling is at least ameliorated.

According to the invention there is provided a release agent for use in baking applications which comprises an emulsion of a food grade mineral oil and water.

The operative formulation of the release agent may include in the order of 4% by volume mineral oil and the balance water. This formulation is, however, greatly

variable and the operative formulation of the release agent may, in practice, be determined by practical requirements.

The release agent of the invention also may be provided in a high oil concentration formulation that can be "diluted" to a required formulation by the addition of water. For example, the release agent may be provided in a five litre quantity that includes approximately 19% mineral oil and that can be "diluted" by the addition of twenty litres of water, resulting in the release agent including in the order of 4% mineral oil.

The food grade mineral oil forming part of the emulsion that forms the release agent of the invention may be silicone oil, white oil, or any other like mineral oil that has equivalent properties and that has food grade qualities.

The emulsion forming the release agent of the invention may be produced by adding a quantity of water, heated to the boiling point thereof, to mineral oil, heated to a temperature typically between 120°C and 130°C, with the resulting reaction providing for the required emulsification of the oil and water. This process may be accompanied by the addition of a suitable quantity of one or more emulsifying agent, that can serve to stabilize the emulsion form. Mechanical agitation during the addition of the water to the oil also may accompany the process.

The invention accordingly extends also to a method of producing a release agent, in accordance with the invention, which includes

heating a predetermined volume of a food grade mineral oil to a temperature between 120°C and 130°C;

heating a predetermined volume of water to its boiling point; and

adding the heated water at a controlled rate to the heated mineral oil to permit the formation of an emulsion of the mineral oil and water, by the reaction resulting from the addition of the water to the mineral oil.

The method may include maintaining the temperature of the mineral oil and water mixture, during the addition of the water to the oil, at least at the boiling temperature of the water and at least until the entire predetermined volume of water has been added to the mineral oil.

The method of the invention may include also the addition of one or more emulsifying agent to the mineral oil and/or the water and/or the emulsified mixture, at a suitable time during the process and in a suitable quantity, for stabilising the mineral oil and water emulsion formed.

The relative volumes of mineral oil and water forming the emulsion and the rate of feed of water into the mineral oil may be variable and may be optimised by experiment in order to ensure the effective formation of the required emulsion.

The method of the invention still further may include mechanical agitation in association of the addition of the heated water to the mineral oil, in order to enhance the emulsification of the mineral oil and water.

The release agent formed in accordance with the method of the invention may be provided in a high mineral oil concentration formulation that can be "diluted" by the addition of water thereto, to form a required formulation that provides for the release agent to fulfil its required purpose. It has been found that the emulsion formed by the method of the invention permits "dilution" by the addition of water, while the required mineral oil and water emulsion state is maintained.

The features of the invention as hereinabove defined are described in more detail hereafter, by way of an example of a particular method for producing a release agent, in accordance with the present invention.

The method of producing a particular release agent, in accordance with the invention, includes heating a determined volume of a food grade silicone oil within a mixing container, to a temperature between 120°C and 130°C, typically approximately 126°C. A volume of water that constitutes approximately four times the volume of silicone oil is simultaneously heated in a separate heating container to the boiling point of the water, which is approximately 100°C if the method is carried out at sea level.

When both the silicone oil and the water have been heated to their required temperatures, the heated water is added to the heated silicone oil contained in the mixing container, causing a mixing reaction that results in the formation of a mineral oil and water emulsion. During this mixing reaction and for as long as heated water is added to the mineral oil, the temperature within the mixing container is maintained at least at the boiling temperature of the water, thus ensuring the continuance of the mixing reaction and the resulting formation of the silicone oil and water emulsion.

The above method also may include the addition of one or more emulsifying agent to the silicone oil and water forming the emulsion, particularly to stabilize the emulsion formed. Typically, a combination of two emulsifying agents that can serve as such, in relation to the silicone oil and the water, respectively, is used, these emulsifying agents including, for example, an emulsifying agent known in the trade as Crodett S40 and an emulsifying agent known in the trade as Crill 3, both emulsifying agents being manufactured by Croda Chemicals. Clearly, alternative emulsifying agents also can be utilized.

The method of the invention also is associated with mechanical agitation within the mixing container during the feed of water into the silicone oil, thus still further enhancing the mixing process and, thereby, the formation of the required silicone oil and water emulsion.

The resulting release agent formulation includes approximately 19% by volume silicone oil, the balance thereof being made up of the water and the emulsifying agents. The release agent is thus in a "concentrated" form and typically is provided in five litre containers.

The release agent so provided can then be "diluted" by the addition of further water thereto, the emulsion formed in accordance with the method described above permitting the addition of further water thereto while the emulsion state of the silicone oil and water is maintained. It is particularly envisaged that the five litre volume of release agent as formed above, can be added to twenty litres of water to provide a release agent having a suitable silicone oil concentration that will enable its use as an effective release agent, in the process of baking bread. The final release agent formulation therefore will include approximately 4% by volume silicone oil, with the balance of the release agent being made up of water and emulsifying agents.

The release agent manufactured in accordance with the method of the invention, or a release agent having an equivalent formulation and that is made up of a food grade mineral oil and water, can be used in a conventional manner by application thereof to bread pans and lids, as used for the baking of bread. Alternatively, it is envisaged that the bread baking process may provide for the application of the release agent externally to the body of dough that is charged into a bread pan, to provide for the required release qualities of the release agent. It is envisaged in this regard that bread baking apparatus may be suitably adapted to facilitate this application of the release agent to the body of dough, different configuration apparatus being envisaged for this purpose.

2002/5790

It has been found that the release agent of the invention, particularly if used as envisaged above by application directly to a body of dough, will permit bread pans to be continuously used over multiple uses, without fouling resulting from the use of the release agent, thus significantly ameliorating the common problem associated with existing release agents that cause fouling of bread pans and that hence require bread pans to be regularly cleaned and/or replaced. The release agent of the invention clearly can be used also for other baking processes.

DATED THIS 18TH DAY OF JULY 2002

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